DRAFT -- DO NOT ENTER

AMENDMENTS TO THE CLAIMS

Claims 20-22 (Cancelled).

23. (Currently Amended) A machine for computing a property of a mathematically modelled physical system, the machine configured to perform the steps comprising:

a) reading, via a machine processing unit, input data including a value for each identified ordered coefficient of a first polynomial p(x) representing said property, said polynomial p(x) being expressed as $p(x) = \Sigma(P_j \cdot x^j)$ where j = 0 to n, a value of a quantity x, a value of a predetermined x_i, and a value of a predetermined $p(x_i)$ correspondingly paired with said predetermined x_i;

b) building, via said machine processing unit, a value of a second polynomial c(x) having ordered coefficients, said second polynomial c(x) being expressible as: $c(x) = \Sigma(C_k \cdot x^k)$ where k = 0 to (n-1) so that said first polynomial p(x) is expressible as: $p(x) = p(x_i)+\{x-x_i\} \cdot c(x)$, comprising the steps of:

i) determining, via said machine processing unit, a value for each ordered coefficient of said second polynomial c(x) by generating a plurality of machine processing unit signals to determine each said ordered coefficient of said second polynomial c(x) from: $C_k=\Sigma(P_{(k+1+j)} x_i^j)$ where j= 0 to (n-1-k);

ii) determining, via said machine processing unit, a value of said second polynomial c(x) by generating a plurality of machine processing unit signals to determine: $c(x) = \Sigma(C_k \cdot x^k)$ where k = 0 to (n-1);

c) constructing, via said machine processing unit, a value of said first polynomial p(x) by generating a plurality of machine processing unit signals to determine: $p(x)=p(x_i)+\{x- x_i\} \cdot c(x)$; and

d) outputting, via said machine-processing unit, said value of the first polynomial p(x) representing said property of the mathematically modelled physical system.